

7.     (NEW)       A sieve jigger for sorting solid material mixtures in a separating liquid bath according to density, comprising:

        a rocker arranged to pivot in the liquid bath and to carry the solid material mixtures;

        a hydraulic cylinder pivotally connected to the rocker to lift the rocker upwardly and to brake a downward movement of the rocker;

        a displacement measuring device operatively connected to a piston of the hydraulic cylinder;

        a hydraulic oil supply and evacuation conduit connected to a working chamber of the hydraulic cylinder;

        a proportional control valve located in the hydraulic oil supply and evacuation conduit;

        a governor;

        the displacement measuring device being operatively connected via the governor to the proportional control valve in order to control the upward movement and the downward movement of the rocker, including controlling at least one of a lifting displacement and a lifting frequency.

8.     (NEW)       A sieve jigger according to claim 7, wherein, to lift the rocker, the proportional control valve is arranged such that hydraulic oil is fed through the hydraulic oil supply and evacuation conduit and the proportional control valve into the working chamber of the lifting and braking cylinder until before an upper dead point of the hydraulic cylinder is reached and, to lower the rocker, hydraulic oil is displaced from the working chamber of the hydraulic cylinder and is discharged through the hydraulic oil supply and evacuation conduit and proportional control valve in a free-fall mode followed by a hydraulic braking of the cylinder piston before a lower dead point of the hydraulic cylinder is reached.

9.     (NEW)       A sieve jigger according to claim 7, wherein the lifting and braking cylinder and the proportional control valve are arranged to have a working cycle comprising a lifting phase of the rocker, a free-fall phase of the rocker and a braking phase of the rocker, wherein all three phases can be controlled independently.

10. (NEW) A sieve jigger according to claim 7, wherein a difference between an upper and lower piston position of the lifting and braking cylinder corresponds to a lifting displacement of the rocker, wherein a lifting displacement range lies between an upper dead point limit and a lower dead point limit of the cylinder piston.

11. (NEW) A sieve jigger according to claim 7, wherein the governor is connected via a signal line to the displacement measuring device of the lifting and braking cylinder and is connected via a further signal line to the proportional control valve, which is arranged in the hydraulic oil circuit between a hydraulic oil pump and the working chamber of the lifting and braking cylinder.

12. (NEW) A sieve jigger according to claim 7, wherein the proportional control valve includes a controllable electronic timing generator system.

13. (NEW) A sieve jigger for sorting solid material mixtures in a separating liquid bath according to density, comprising:

- a rocker arranged to carry the solid material mixtures in the liquid bath;
- a hydraulic cylinder having a piston and a working chamber, and being connected to the rocker to lift the rocker upwardly and to brake a downward movement of the rocker;
- a displacement measuring device operatively connected to the piston;
- a hydraulic oil supply and evacuation conduit connected to the working chamber;
- a proportional control valve located in the hydraulic oil supply and evacuation conduit; and
- a governor connected via a signal line to the displacement measuring device and connected via a further signal line to the proportional control valve.

14. (NEW) A sieve jigger according to claim 13, wherein, to lift the rocker, the proportional control valve is arranged such that hydraulic oil is fed through the hydraulic oil supply and evacuation conduit and the proportional control valve into the working chamber of the lifting and braking cylinder until before an upper dead point of the hydraulic cylinder is reached and, to lower the rocker, hydraulic oil is displaced from the working chamber of the hydraulic cylinder and is discharged through the hydraulic oil supply and evacuation conduit and proportional control valve in a free-fall mode followed by a hydraulic braking of the cylinder piston before a lower dead point of the hydraulic cylinder is reached.

15. (NEW) A sieve jigger according to claim 13, wherein the lifting and braking cylinder and the proportional control valve are arranged to have a working cycle comprising a lifting phase of the rocker, a free-fall phase of the rocker and a braking phase of the rocker, wherein all three phases can be controlled independently.

16. (NEW) A sieve jigger according to claim 13, wherein a difference between an upper and lower piston position of the lifting and braking cylinder corresponds to a lifting displacement of the rocker, wherein a lifting displacement range lies between an upper dead point limit and a lower dead point limit of the cylinder piston.

17. (NEW) A sieve jigger according to claim 13, wherein the proportional control valve includes a controllable electronic timing generator system.